Amendments to the Claims

This listing of the claims will replace all prior versions, and listings, of claims in this application.

Listing of Claims

1. (currently amended) A method of screening for candidate agents capable of modulating germline transcription, comprising:
   a) adding a library of candidate agents to a plurality of cells;
   b) preparing mRNA from said plurality of cells to form an mRNA mixture;
   c) adding to said mixture at least a first RNAse protection probe (RPP) substantially complementary to a first germline mRNA from an immunoglobulin heavy chain gene locus to form a first hybridization complex between said first germline mRNA and said first RPP;
   d) adding an RNAse protection enzyme (RPE) to said mixture, such that mRNA that is not protected is digested;
   e) quantifying the amount of said first germline mRNA as compared to a cell in the absence of a candidate agent; and
   f) identifying at least one candidate agent that alters the amount of said first germline mRNA.

2. (original) A method according to claim 1, further comprising stimulating said cells to produce germline mRNA.

3. (original) A method according to claim 1, wherein said RPP is labeled.

4. (original) A method according to claim 3, wherein said label is a fluorescent label.

5. (original) A method according to claim 3, wherein said label is a radioisotope.

6. (original) A method according to claim 1, wherein said germline mRNA is Ig alpha-1.

7. (original) A method according to claim 1, wherein said germline mRNA is Ig alpha-2.

8. (original) A method according to claim 1, wherein said germline mRNA is Ig epsilon.

9. (original) A method according to claim 1, wherein said germline mRNA is Ig gamma-1.

10. (original) A method according to claim 1, wherein said germline mRNA is Ig gamma-2.

11. (original) A method according to claim 1, wherein said germline mRNA is Ig gamma-3.

12. (original) A method according to claim 1, wherein said germline mRNA is Ig gamma-4.

13. (original) A method according to claim 1, wherein said RPP has a sequence selected from the group consisting of the sequences depicted in Figure 3.

14. (original) A method according to claim 1, wherein said RPP has a sequence selected from the group consisting of the sequences depicted in Figure 4.

15. (original) A method according to claim 1, wherein said library comprises at least 10^3 candidate agents.

16. (original) A method according to claim 1, wherein said library comprises at least 10^5 candidate agents.

17. (original) A method according to claim 1, further comprising:
    a) adding to said mixture at least a second RNAse protection probe (RPP) substantially complementary to a second germline mRNA to form a second hybridization complex between said second germline mRNA and said second RPP;
    b) quantifying the amount of said second germline mRNA as compared to a cell in the absence of a candidate agent; and
    c) identifying at least one candidate agent that alters the amount of said first germline mRNA but not said second germline mRNA.

18. (original) A method according to claim 1, wherein said library comprises small molecules.

19. (original) A method according to claim 1, wherein said library comprises peptides.

20. (original) A method according to claim 19, wherein said peptides are random peptides.

21. (original) A method according to claim 19, wherein said peptides are partially random peptides.

22. (original) A method according to claim 19, wherein said adding is done using retroviruses encoding said peptides.

23. (original) A method according to claim 19 wherein said adding is done using retroviruses comprising sequence derived from a cDNA library.

24. (original) A method of quantifying the amount of a plurality of germline constructs comprising:
    a) preparing mRNA from said plurality of cells to form an mRNA mixture;

c) adding at least three RNAse protection probes (RPPs) selected from the group consisting of the sequences depicted in Figures 3 and 4;

d) adding an RNAse protection enzyme (RPE) to said mixture, such that mRNA that is not protected is digested;

e) quantifying the amount of said germline mRNA.

B1 Cont

25. (original) A kit for quantifying the amount of germline mRNA in a sample, comprising

a) at least one RNAse protection probe (RPP) comprising a nucleic acid sequence selected from the group consisting of the nucleic acid sequences of the Igα1, Igα2, Ig-epsilon, Ig gamma-1, Ig gamma-2, Ig gamma-3 and Ig gamma-4 RPPs set forth in Figures 3 and 4; and

b) an RNAse protection enzyme (RPE);

and optionally comprising at least one RNAse protection probe (RPP) which is substantially complementary to a transcript of a housekeeping gene.

26. (original) A kit according to claim 25, wherein all RNAse protection probes are labeled.